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BURNS DOANE SWECKER & MATHIS L L P			LOPEZ, CARLOS N	
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DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,956

Applicant(s)

QUENZER ET AL.

Examiner

Carlos Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 2-4 and 22-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-12,14-15,17-20 is/are rejected.
- 7) ☒ Claim(s) 5,13,16 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/30/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of claims 1 and 5-21 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Information Disclosure Statement

The cited Non-Patent Literature (NPL) to Schulze has not been considered because it fails to meet 37 CFR 1.98 (5). The cited NPL has not been provided with a date of publication.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 1, the limitation "structuring a side of said second substrate";

In claim 7, "wherein a metal layer is employed as the parting layer, the metal layer having a melting point below the melting points of said first and second substrates".

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for removing a carbon layer by thermal action as recited in page 9, does not reasonably provide enablement for a diamond layer, a diamond type layer, or a SiC layer to be destroyed by a chemical and/or thermal action. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The specification does not disclose a chemical or thermal action that would destroy a diamond layer, a diamond type layer, or a SiC layer.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-9, 12 and 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 6, the terms "said first and second" lacks antecedent basis.

Regarding claim 9, the phrase "diamond-type" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "the type"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

As for claim 17, the limitation "at least one of the pressure" in lines 1-2, lacks antecedent basis.

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Claim 18, the limitation "said glass substrate" in line 1, lacks antecedent basis

Claim 12 contains the trademark/trade name Pyrex[®]. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe glass and, accordingly, the identification/description is indefinite.

It is noted to applicant that the term "glass-type" material has been accorded the definition recited in page 4 of the specification, which recites the following:

"By the term "glass-type" material, however, any material is to be understood that presents the expedient material properties of glass at least in parts, and that presents viscous flow properties under the influence of an elevated temperature and/or the action of a pressure difference, e.g. glass-ceramics."

Thus, plastic and glass materials are being considered as meeting the given definition of glass-type materials.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Jernt (US 3,221,654). As shown in figures 3-4 of Jernt, a structured recessed first substrate 20 is joined to a glass-type substrate 24 in at least a partly overlapping relationship as shown by the edges of the glass-type substrate 24 and substrate 20. (It is noted that the plastic material forming substrate 24, meets applicant's definition of "glass-type" defined in page 4 of the specification.) The claimed annealing of the joined first and second substrates in such a way that the glass type material flows into the recess is deemed as Jernt first heating the glass like substrate, and then joining the two substrates so that a vacuum created at the bottom of the first substrate will allow the glass-type substrate to flow into the recess (27) of substrate 20 (See bridging paragraph of columns 2-3). (Note that claim 1 fails to claim an order of steps meaning that the glass-type substrate 24 which is first heated and then joined to the first substrate as done by Jernt still reads on claim 1.) The disclosed annealing allows for the structuring a plurality of protrusions onto the glass-type substrate reading on the claimed limitation of "structuring a side of said second substrate". As for the claimed separation step, figure 5 shows the glass-type substrate separated from the first substrate.

As for claim 10, as shown in figure 3, the width of the recess 27 is greater than 10% of the thickness of the glass-type substrate 24.

Claims 1, 10-11, and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Rolfe (US 6,256,149). As shown in figures 1-2 of Rolfe, a structured recessed first substrate 28 is joined to a glass-type substrate 12 in at least a partly overlapping relationship as shown by the edges of the glass-type substrate 12 in figure 2. It is noted that the thermoplastic material, which forms substrate 12, meets applicant's definition of "glass-type" defined in page 4 of the specification. The claimed annealing step that will allow the glass-type substrate to flow into the recess (30) of substrate 28 is deemed as the heating of the substrate 12 sufficiently to allow it to flow into recess 30 (Bridging paragraph of Col. 1-2 and Col. 3, lines 30-46). The disclosed annealing allows for the structuring a plurality of protrusions onto the glass-type substrate reading on the claimed limitation of "structuring a side of said second substrate". As for the claimed separation step, figure 7 shows the glass-type substrate separated from the first substrate.

As for claim 10, Rolfe discloses that the width of the recess 30 is .020 inches (See Col. 3, line 9) and the thickness of the glass-type substrate 12 to be .015 inches (Col. 4, lines 53).

As for claim 11, at column 3, line 20ff, the first substrate is a semiconductor substrate such as aluminum or brass.

As for claim 14, Rolfe notes that the grooves 30 are filled through a vacuum forming process (see Col. 4 lines 29ff) by creating a pressure differential that would allow the glass-like material to flow into the recess without contacting the bottom. Hence, Rolfe vacuum forming process of flowing glass-like material into the recess 30 inherently provides for a negative pressure to prevail in the unfilled areas of recess 30.

As for claim 15, a second pressure, as shown by arrows "A", act on the surface of glass-type material turned away from the first substrate (Col. 4, lines 1ff).

Claims 1, 6, 8-9, 11-12, 15 and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Budinski et al (US 6,305,194). As shown in figures 7 of Budinski, a structured recessed first substrate 104 is joined to a glass-type substrate 114 in at least a partly overlapping relationship. The claimed annealing step that will allow the glass-type substrate to flow into the recess (110) of substrate 104 is deemed as the heating of the substrate 114 sufficiently to allow it to flow into recess 110 (Col. 4, lines 35ff). The disclosed annealing allows for the structuring a plurality of protrusions onto the glass-type substrate reading on the claimed limitation of "structuring a side of said second substrate". As for the claimed separation step, Budinski notes that the glass-type substrate is separated from the mold substrate 104 (col. 4, lines 51ff).

As for claims 6 and 9, the first substrate 104 is provided with a carbon layer that allows for the separation of the glass type substrate from the first substrate (Col. 5, lines 60ff). See also col. 7, line 29, using diamond like layers. The carbon layer will be destroyed by thermal action as it is continuously used to press the glass-type substrate.

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Additionally in regards to claim 8, the carbon layer is deemed as an oxidizable layer when thermal energy is applied.

As for claims 11 and 20, the first substrate and third substrate (mold 102) comprises a semiconductor substrate made of graphite or molybdenum (Col. 4, lines 55ff). Additionally as noted in Col. 5, lines 60ff, the first substrate deemed as mold 104 includes a silicon substrate made of SiC, which reads on claim 12.

As for claim 15, an overpressure, deemed as mold 102 of Budinski, acts on the side of glass type substrate turned away from the first substrate.

As for claim 19, the claimed third substrate evenly applied to the side of the second substrate is deemed as mold 102.

Claims 1, 11, 15 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nelson et al (US 6,385,997). As shown in figures 11 of Nelson, a structured recessed first substrate 104 is joined to a glass-type substrate 114 in at least a partly overlapping relationship. The claimed annealing step that will allow the glass-type substrate to flow into the recess (110) of substrate 104 is deemed as the heating of the substrate 114 sufficiently to allow it to flow into recess 110 (Col. 9, lines 1-40). The disclosed annealing allows for the structuring a plurality of protrusions onto the glass-type substrate reading on the claimed limitation of "structuring a side of said second substrate". As for the claimed separation step, Nelson notes that the glass-type substrate is separated from the mold substrate 104 (Col. 9, lines 31-32).

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As for claims 11 and 20, the first substrate and third substrate (mold 102) comprises a semiconductor substrate made of graphite or molybdenum (Col. 9, lines 36). As for claim 15, an overpressure, deemed as mold 102 of Budinski, acts on the side of glass type substrate turned away from the first substrate.

As for claim 18, Nelson notes that grinding of the glass type material substrate in order to planish said substrate has been done in the art to cure deformation defects incurred to the processing of the glass type substrate (Col. 3, lines 29ff).

As for claim 19, the claimed third substrate evenly applied to the side of the second substrate is deemed as mold 102.

Allowable Subject Matter

Claims 5,13,16, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7 and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior art fails to disclose or reasonably suggest a removal of a first substrate, or a third substrate (as recited in claim 21), joined to a glass-type substrate by etching in combination with the claimed annealing step as recited in claim 5. As for claim 7, the cited prior art fails to disclose or reasonably suggest a parting layer made of a metal layer having a melting point below the melting point of the first and second

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substrates in combination with the claimed annealing step. Additionally, the cited prior art fails to disclose or reasonably suggest joining a first substrate to a second substrate by anodic bonding in combination with the claimed annealing step as recited in claim 13. As for claims 16-17, the cited prior art fails to disclose or reasonably suggest carrying out the claimed annealing process by controlling temperature and period in such a way that the inflow of the glass type material is stopped at a desired depth of a recess. The cited Rolfe reference only provides a pressure and temperature control to flow the claimed glass type material to a desired depth of the claimed recess.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References other than A-D, have been cited to show the state of the art.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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